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Ohio State Engineer

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Some Suggestions About Your Future Career

Every young man with a job to do now—whether it is training for the services, or actually serving, as millions of you are—looks forward to the day when he can begin his career.

There are going to be many exciting things to do.

From what we see ahead for aluminum, may we venture a few suggestions?

You can learn a lot about the progressiveness of a future employer by finding out what he is doing about using aluminum in

his business. For instance . . .

If you see a lot of aluminum on a new product, that's a good line for you to sell.

If you see a lot of aluminum used in the shop to make things light and easy to handle, that's a good company to be with.

If you see a chance to make anything, or sell anything, or work with anything made of aluminum, you're going to be way out in front.

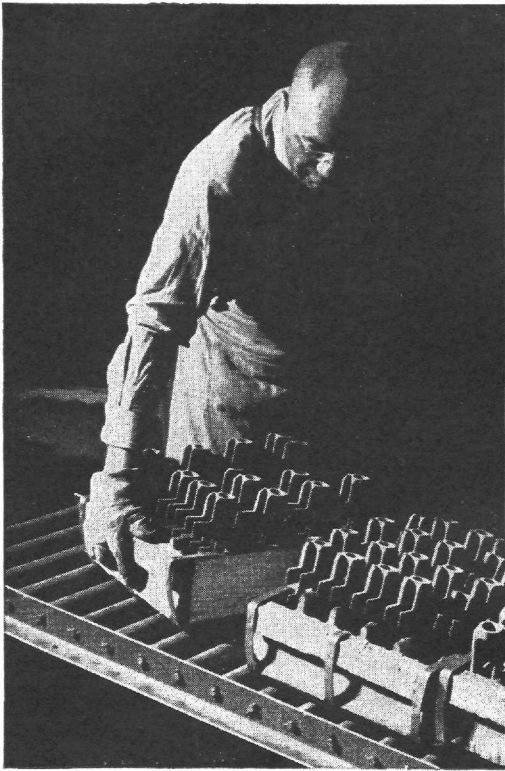
This is how we see it at Alcoa . . . the first name in Aluminum.



A PARENTHETICAL ASIDE: FROM THE AUTOBIOGRAPHY OF **ALCOA ALUMINUM**

• This message is printed by Aluminum Company of America to help people to understand *what we do* and *what sort of men* make aluminum grow in usefulness.

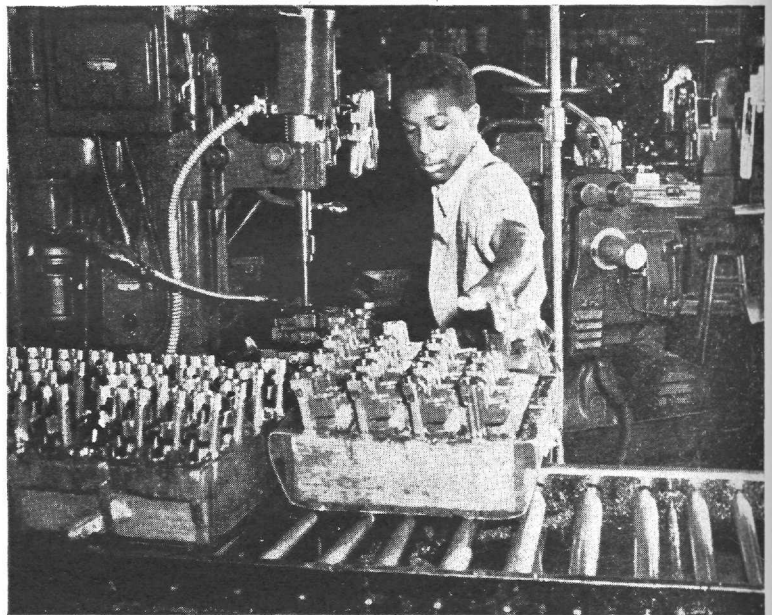
10% More Output WITH 52% LESS HELP!



Springfield Armory Photos

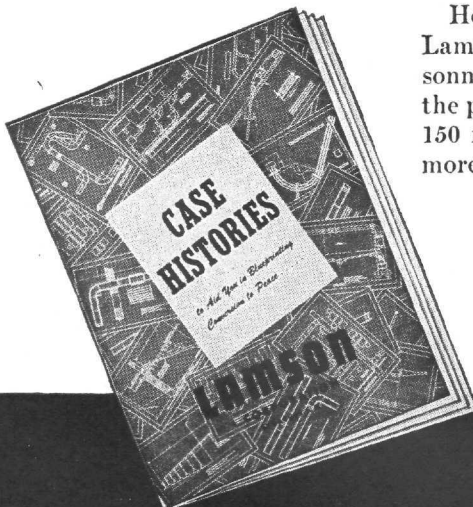
Another example of the increased efficiency made possible by

LAMSON *Conveyors*



★ When orders were issued to expand production of Garand rifles at the Springfield Armory, it became necessary to install a system of progressive manufacture, in place of the old, manpower-consuming method of hand-trucking from one operation to the next.

How well this was achieved is shown by the fact that after Lamson Conveyors were installed, in one department alone personnel was reduced from 54 to 26—and output increased 10%! On the production line turning out a single part (the cartridge receiver) 150 miles of walking per day were eliminated, releasing 30 men for more productive work!



← In our new booklet "Case Histories to Aid You in Blueprinting Conversion to Peace" Lamson engineers present actual examples of the part played by Lamson Conveyors in streamlining production, eliminating manual handling and back-tracking. A complimentary copy will be promptly mailed you if you give your college and class.

LAMSON CORPORATION

Makers of Conveyors and Tubes

950 Lamson St., Syracuse 1, N. Y.

Chemicals that protect your car!

HERE ARE THREE CHEMICALS that you are probably better acquainted with from the way they *act* as anti-freeze in your car than from the way they *look* in print.

These chemicals are manufactured in large quantities by CARBIDE AND CARBON CHEMICALS CORPORATION. Uncolored, they are water-white. To the chemists, who must know what they will do in your car, they are compounds of carbon, hydrogen and oxygen, the atoms of which are shown here in the molecular models.

ETHYLENE GLYCOL, ETHANOL and METHANOL are the bases of anti-freezes—and they help to take one of the worries out of winter for millions of motorists.

TODAY AND TOMORROW

Over the years, CARBIDE AND CARBON CHEMICALS CORPORATION and other Units of UCC, notably NATIONAL CARBON COMPANY, INC., have kept at their research—both in the laboratory and on the road—for the constant improvement of anti-freeze and anti-rust protection for your car. This is an important reason why you can depend on the following whenever and wherever you find them:

"Prestone" ethylene glycol-base anti-freeze. One "shot" gives all-winter protection.

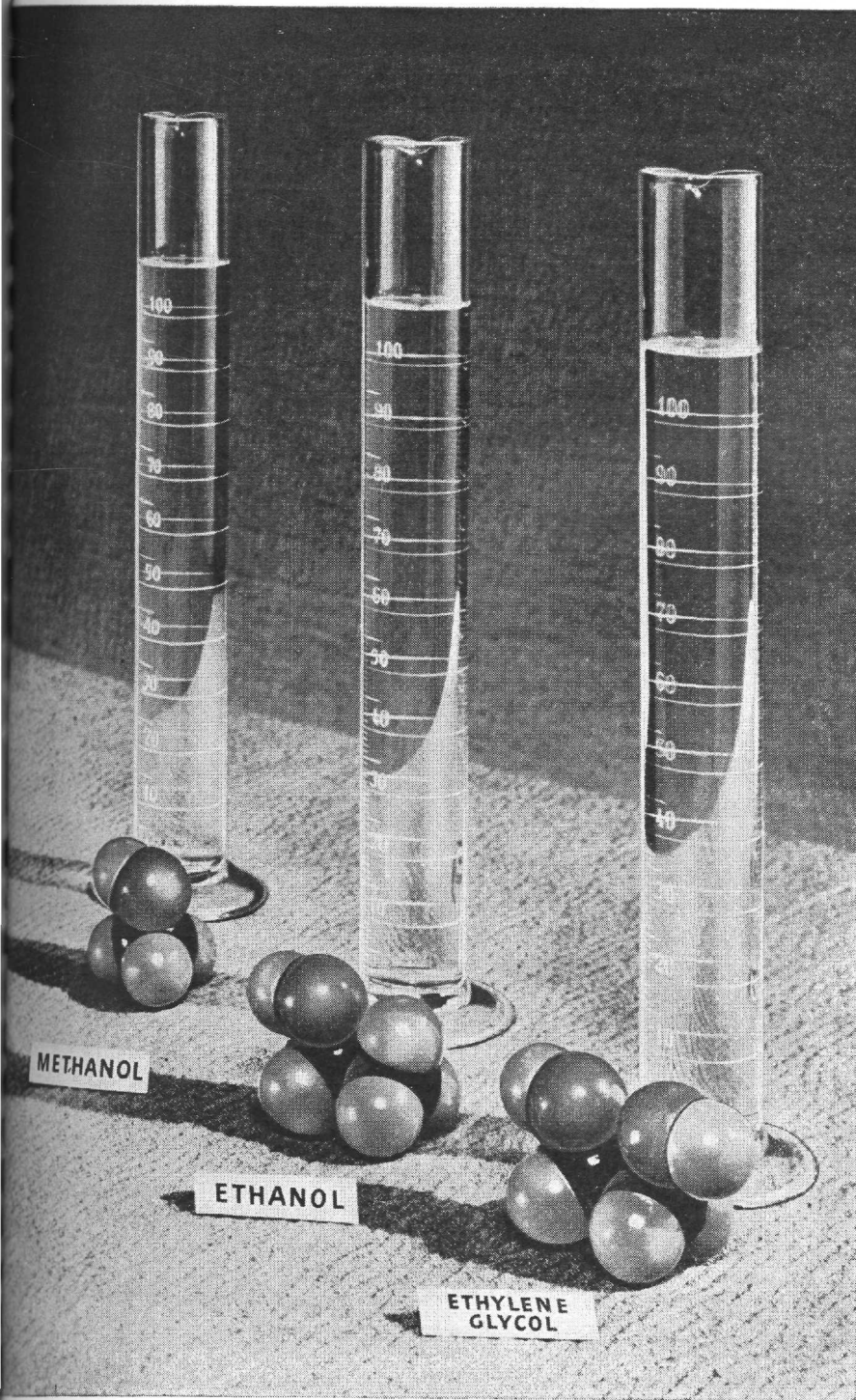
"Trek" methanol-base anti-freeze, which is again available to the extent that the production of methanol has caught up with its war-critical uses.

"Blue-Flo" ethanol-base anti-freeze. Not being manufactured this year because ethanol (ethyl alcohol) has a bigger war job to do.

Certain other anti-freezes formulated and manufactured by Units of UCC for large national distributors.

"Rustone" corrosion preventive which, when added to the water in a clean cooling system, inhibits the formation of rust.

Car owners are invited to send for the booklet P-11, "Manual of Cooling System Service." It will be sent without cost or obligation.



BUY UNITED STATES WAR BONDS AND STAMPS

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Principal Units in the United States and their Products

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Electro Metallurgical Company
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CHEMICALS

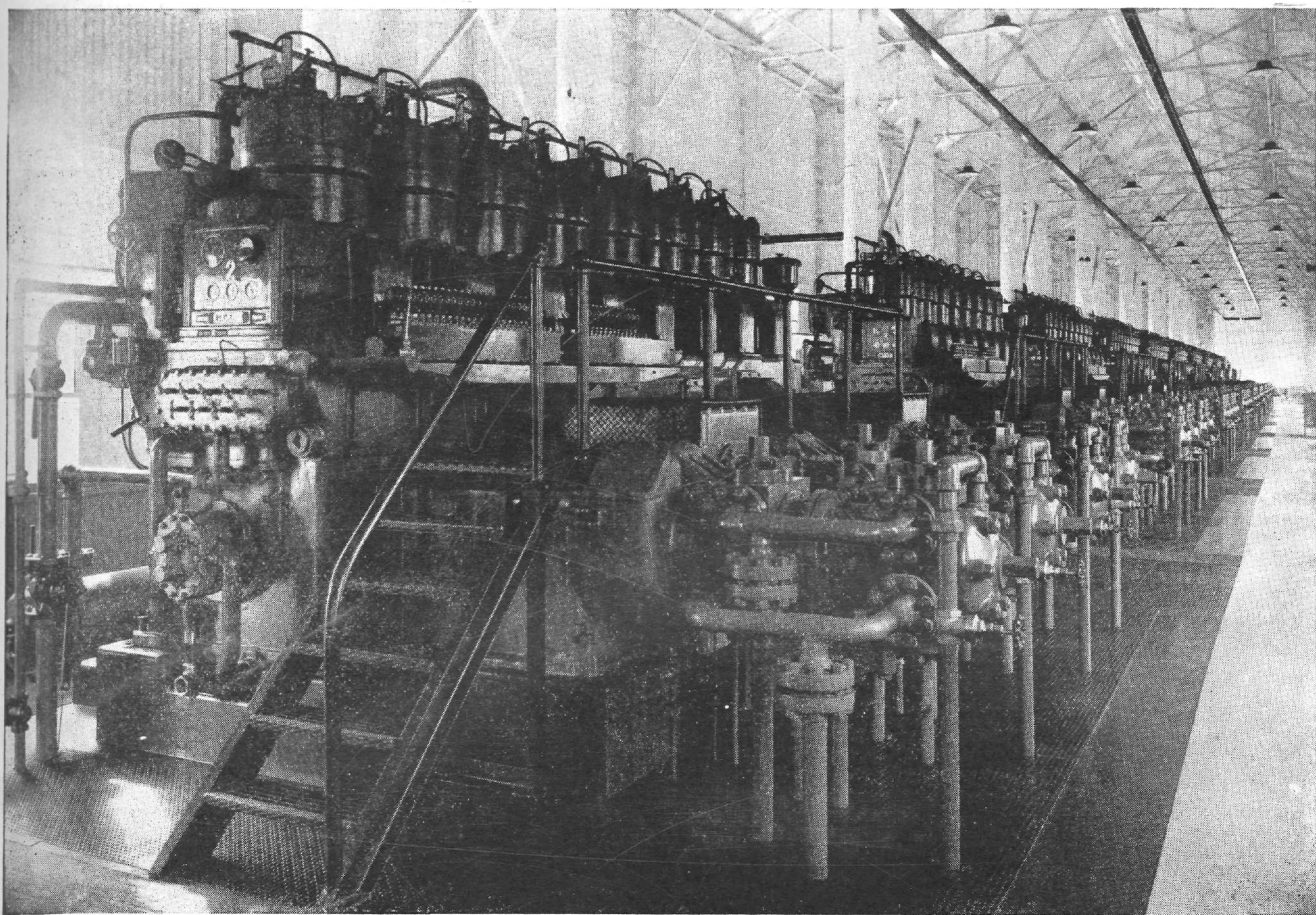
Carbide and Carbon Chemicals Corporation
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The Prest-O-Lite Company, Inc.

PLASTICS

Bakelite Corporation
Plastics Division of Carbide and Carbon Chemicals Corporation



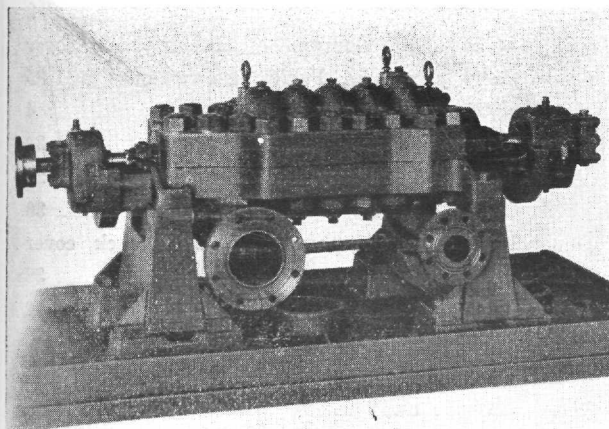
Eleven 8-cylinder 800 BHP CLARK "Angles" in La Gloria Corporation Recycling Plant, Falfurrias, Texas.

Achievements in the Field

PACIFIC PUMP WORKS

Boiler Feed Pumps in oil refineries, power houses and utility field must be tough and efficient. For this purpose, Pacific manufactures a complete line of centrifugal pumps in types and sizes to meet all flow conditions—High Pressure multi-stage pumps, capacities up to 1500 G.P.M. Solid forged-steel case multi-stage pumps for higher pressures—single and two-stage pumps for lower pressures.

Illustrated below is one of the many types giving unsurpassed service in this important field.



Pacific Type JBMB—Size 3-inch precision engineered 5-stage Boiler Feed Water Pump No. 7138, installed in a large Western oil refinery.

CLARK BROS. CO., INC.

This battery of eleven 8-cylinder, 800 BHP CLARK "Angles" in the recycling plant of the La Gloria Corporation, near Falfurrias, Texas, is one of the largest compressor plants ever placed in operation. The daily capacity is 185,000,000 cu. ft. of gas.

The plant is a unitization project,

handling the recycling operations of the entire La Gloria Field for the four major oil companies which control its production. The compressors operate at 1500 lbs. suction pressure and return the gas to two separate sands at discharge pressures of 2700 lbs. and 3100 lbs., respectively.

Clark Bros. Co., Inc. and Pacific Pump Works are individually operating members of the Dresser Industries.

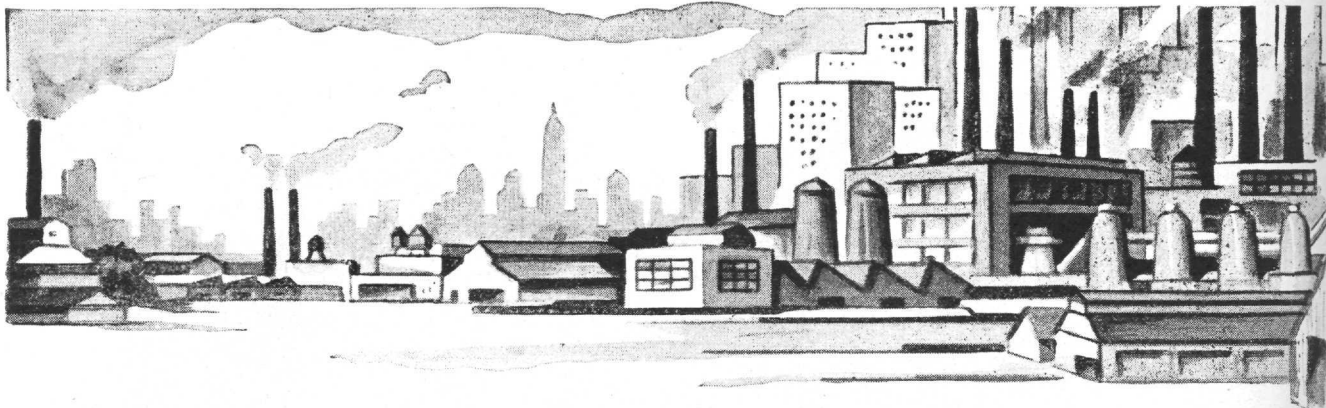
"Two of the Dresser Industries"

CLARK BROS. CO., INC.
OLEAN, NEW YORK

PACIFIC PUMP WORKS
HUNTINGTON PARK, CALIFORNIA

NEW YORK, NEW YORK
HOUSTON, TEXAS
TULSA, OKLAHOMA

CHICAGO, ILLINOIS
BOSTON, MASSACHUSETTS
HUNTINGTON PARK, CALIFORNIA



BOILERS OF THE FUTURE

The pressure of war-time production has demanded of Babcock & Wilcox an ever-greater share of the responsibility for producing boilers for increased-capacity steam generating plants. A large number of Public Utilities, Industrial Power Plants and Ships have been equipped with B & W Boilers of modern design. These improved boilers will be available for FUTURE use in ALL industries. It would be well to familiarize yourself with B & W Boilers NOW.



BOOKLET

"The Design of Water-Tube Boiler Units" is a 14-page booklet that explains what type of boilers are used for various types of service. Copy FREE on request.

THE BABCOCK & WILCOX COMPANY . . . 85 LIBERTY STREET . . . NEW YORK, N. Y.

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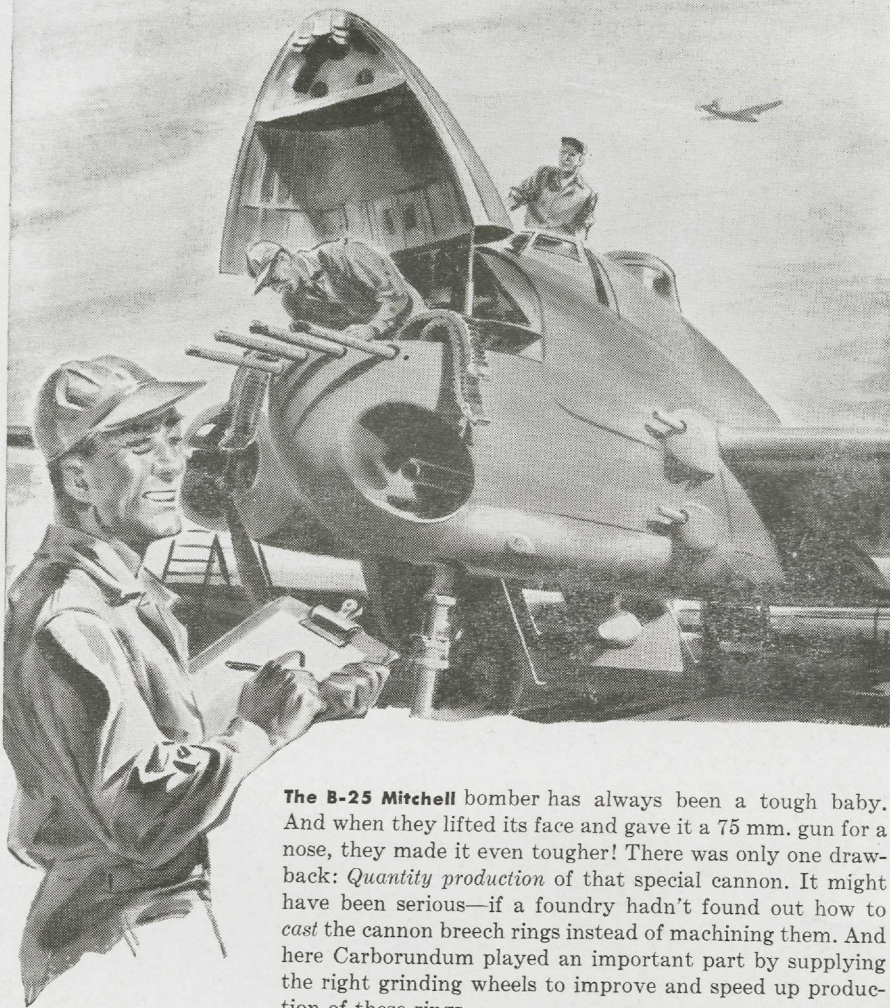
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The plane that had its face lifted!

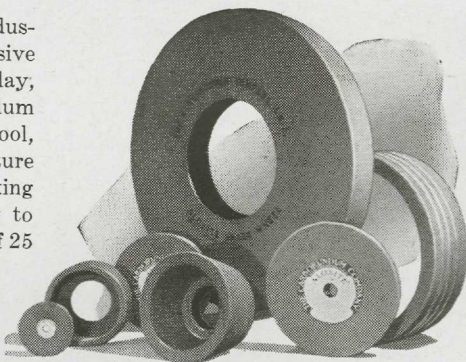


The B-25 Mitchell bomber has always been a tough baby. And when they lifted its face and gave it a 75 mm. gun for a nose, they made it even tougher! There was only one drawback: *Quantity production* of that special cannon. It might have been serious—if a foundry hadn't found out how to *cast* the cannon breech rings instead of machining them. And here Carborundum played an important part by supplying the right grinding wheels to improve and speed up production of these rings.

It was more than fifty years ago that industry bought its first manufactured abrasive grinding wheel from Carborundum. Today, industry uses abrasives by Carborundum everywhere from foundries, machine tool, aviation and automobile plants to furniture and shoe factories. That is why a working knowledge of abrasives is a good thing to have. Write us today for a complete set of 25

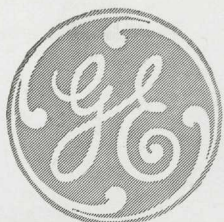


free bulletins on the First Principles of Grinding. The Carborundum Company, Niagara Falls, New York.



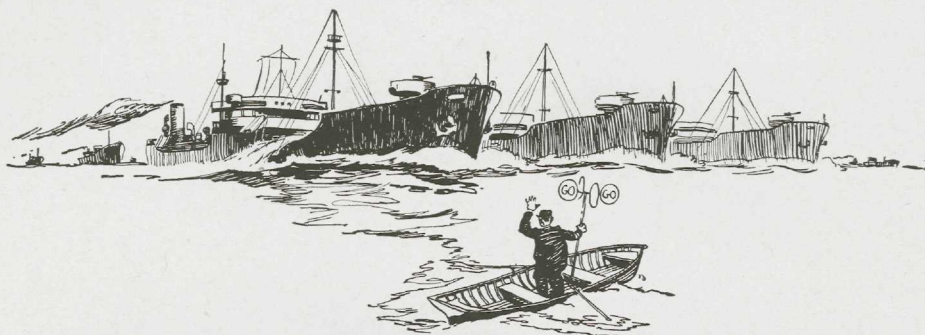
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Campus News

RESEARCH AND ENGINEERING KEEP GENERAL ELECTRIC YEARS AHEAD

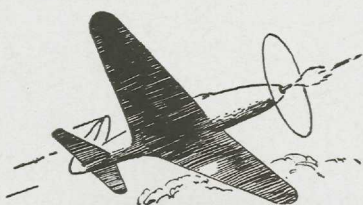


TANKERS ON PARADE

IT would take 1,900 miles of tank cars to equal the capacity of all the tankers built since Pearl Harbor which are powered by General Electric propulsion equipment. At any rate, that was the figure through July of this year.

General Electric first built turbine electric drives for the Navy in 1909. Chief advantages then and now have been speed and efficiency. In wartime these are especially important. Tankers must move fast to keep up with the swiftest ships in the fleet, keep ahead of enemy subs, and utilize their carrying space fully.

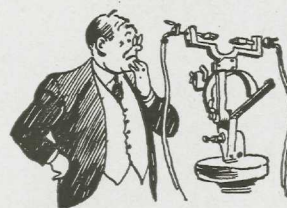
General Electric is building three-quarters of the drives for the high-speed tankers ordered by the Maritime Commission since the United States entered the war. Speed of the 6,000-hp tankers is better than 15 knots, the 10,000-hp ones can do over 17 knots—both are considerably faster than a submerged submarine. The new high-speed tankers move fast enough and are sufficiently armed to run free on the long treks across the Atlantic and the Pacific. They no longer wait for convoys.



DOUGHNUT MOTOR

IN the nose of some fighter planes, right in the middle of the motor that feathers the propeller, is a 37-mm cannon. Building a motor with a hole where the shaft ought to be was a brain twister, but G-E engineers solved this problem with an electric motor shaped like a doughnut.

The motor which automatically changes the angle of the propeller blades as flying conditions change has been designed with a hollow shaft. It is one of the many unusual motors that General Electric has designed and built to meet some specific need of America's fighting men.



BRAIN CHILD

ALMOST everyone likes to experiment now and then. It's fun, and in addition, worthwhile results are sometimes obtained. There is one machinist at the General Electric plant in Bridgeport whose experimenting brought real results recently.

The device shown above is his brain child. It may look a little grotesque, but it has proved very useful. A brazing fixture which can be rotated around three different axes, it has speeded up production on ignition parts for aircraft and earned a \$750 cash suggestion award for the inventor. *General Electric Co., Schenectady, New York.*

Hear the General Electric radio programs: "The G-E All-girl Orchestra" Sunday 10 p.m. EWT, NBC—"The World Today" news, every weekday 6:45 p.m. EWT, CBS.

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